

**What is Claimed:**

1. A system for exposing a fluid to UV energy for treatment  
2. of the fluid, said system comprising:

3. a fluid passageway at least partially defined by a UV energy  
4. transmissive barrier;

5. at least one UV energy source positioned to transmit UV energy  
6. through said barrier and into said fluid passageway; and

7. at least one UV energy sensor positioned to sense UV energy  
8. transmitted through said barrier, said sensor being configured to detect a  
9. reduced amount of UV energy transmitted through said barrier.

1. 2. The system of claim 1 wherein said fluid passageway is  
2. configured to accommodate fluid flow.

1. 2. 3. The system of claim 2 comprising a plurality of fluid  
3. passageways each at least partially defined by a UV energy transmissive  
4. barrier, said system being configured to at least partially divert fluid flow  
5. from one of said fluid passageways to another of said fluid passageways after  
6. said sensor detects an amount of UV energy transmitted through said barrier  
of said one fluid passageway is below a predetermined amount.

1. 2. 3. 4. The system of claim 1 wherein said system is configured  
4. to reduce fluid flow in the fluid passageway after said sensor detects that an  
amount of UV energy transmitted through said barrier is below a  
predetermined amount.

1. 2. 5. The system of claim 1 wherein said at least one UV  
energy source comprises an LED.

1. 2. 6. The system of claim 1 wherein said at least one UV  
energy source is positioned adjacent said barrier.

1           7. The system of claim 1 comprising a plurality of UV energy  
2 sources and a plurality of UV energy sensors, each of said plurality of UV  
3 energy sensors being positioned to sense UV energy transmitted through said  
4 barrier by at least one of said UV energy sources.

1           8. The system of claim 7 wherein said UV energy sources  
2 are positioned adjacent an external surface of said fluid passageway to  
3 transmit UV energy through said barrier.

1           9. The system of claim 7 wherein said UV energy sensors  
2 are positioned adjacent an external surface of said fluid passageway for  
3 sensing UV energy transmitted through said barrier.

1           10. The system of claim 1 wherein said UV energy  
2 transmissive barrier at least partially defines at least one aperture extending  
3 into said fluid passageway, said at least one UV energy source being disposed  
4 at least partially within said aperture to transmit UV energy into said fluid  
5 passageway through said UV energy transmissive barrier.

1           11. The system of claim 1 wherein said UV energy  
2 transmissive barrier at least partially defines a plurality of apertures  
3 extending into said fluid passageway, said system including a plurality of UV  
4 energy sources, and at least one of said UV energy sources being disposed at  
5 least partially within each of said apertures to transmit UV energy into said  
6 fluid passageway through said UV energy transmissive barrier.

1           12. The system of claim 11 wherein said plurality of apertures  
2 are configured at an angle with respect to a direction of flow of the fluid in  
3 said fluid passageway.

1           13. A method of exposing a fluid to UV energy for treatment  
2 of the fluid, said method comprising the steps of:

3           transmitting UV energy through a UV energy transmissive  
4 barrier and into a fluid passageway, thereby exposing fluid in the fluid  
5 passageway to UV energy; and

sensing the amount of UV energy transmitted through the UV energy transmissive barrier.

14. The method of claim 13 further comprising the step of:  
flowing fluid through the fluid passageway.

at least partially diverting fluid flow from the fluid passageway to another fluid passageway after sensing an amount of UV energy transmitted through the UV energy transmissive barrier is below a predetermined amount.

16. The method of claim 14 further comprising the step of:

reducing fluid flow in the fluid passageway after sensing that an amount of UV energy transmitted through the UV energy transmissive barrier is below a predetermined amount.

17. The method of claim 13 wherein said transmitting step

includes transmitting UV energy from at least one LED through the UV energy transmissive barrier.

18. The method of claim 13 further comprising the step of:

cleaning the UV energy transmissive barrier after the sensed amount of UV energy transmitted through the UV energy transmissive barrier is below the predetermined amount.

19. The method of claim 18 further comprising the step of:

2 diverting fluid flow from the fluid passageway to another fluid  
3 passageway after sensing the amount of UV energy transmitted through the  
4 UV energy transmissive barrier is below the predetermined amount.

1 20. The method of claim 19 further comprising the step of:

2 at least partially restoring fluid flow from the another fluid  
3 passageway to the fluid passageway after the cleaning step.